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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,651	09/30/2003	Paul G. Janitch	00580-0188US	5829

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EXAMINER	
TRAN, CHUC	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No.	Applicant(s)	
	10/675,651	JANITCH ET AL.	
	Examiner	Art Unit	
	Chuc D. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 25-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,25 and 28-33* is/are rejected.

7)☐ Claim(s) *26 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date. 12/19/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-17 and 25-33, drawn to dual instrument radar system, classified in class 324, subclass 642, 644.

II. Claims 18-24 and 34-37, drawn to antenna with high frequency transceiver, classified in class 343, subclass 850, 785.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions Group I (claims 1-17, 25-33) and Group II (claims 18-24, 34-37) are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group II (claims 18-24, 34-37) has separate utility such as "loop launcher". See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. William McLaughlin, Reg: 32,273, Tel: (312) 876-1800 on 4/8/05 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-17 and 25-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-24 and 34-37 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17 and 30-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter the "union nut operatively secured to the waveguide for threading relative to the antenna at any angular orientation" which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear how the union nut works with the specification.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, 9-17, 25 and 28-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Wien et al (USP. 6,202,485).

Regarding claim 1, Wien et al disclose a process control instrument comprising:

- a control for generating or receiving a high frequency signal (Col. 6, Line 8) (Abstract);

- a waveguide (13) comprising a cylindrical housing closed at one end by a rear wall (2) (Fig. 5);

- a loop launcher (5) operatively connected to the control and comprising a wire having a first straight leg electrically connected at one end to the control and extending into the

waveguide a first select length, a second straight leg connected at one end to the rear wall and extending into the waveguide a second select length, greater than the first select length, and a curved middle section connecting other ends of the first and second straight legs (Col. 5, Line 51) (Fig. 5); and

- an antenna (4) operatively coupled to the waveguide (13) (Fig. 5).

Regarding claim 2, Wein et al disclose that the second leg is located at a center axis of the waveguide (13) (Fig. 5).

Regarding claim 3, Wein et al disclose that the first leg is located off center in the waveguide (13) (Fig. 5).

Regarding claim 4, Wein et al disclose that the first select length is about a quarter wavelength (Col. 5, Line 55) (Fig. 5).

Regarding claim 5, Wein et al disclose that the waveguide has a length of about three-quarter waveguide wavelength (Col. 5, Line 1) (Fig. 5).

Regarding claim 7, Wein et al disclose that the loop launcher (5) is asymmetrically placed entirely on one side of an axis of the waveguide (13) (Fig. 5).

Regarding claim 9, Wein et al disclose that the waveguide (13) is filled with a dielectric material substantially surrounding the loop launcher (5) (Col. 5, Line 9) (Fig. 5).

Regarding claim 10, Wein et al disclose that a coupling (31) cavity surrounding the waveguide (13) for coupling the antenna (4) to the waveguide (Col. 7, Line 43) (Fig. 6).

Regarding claim 11, Wein et al disclose that the coupling cavity is formed of metal to define an intermediate waveguide (Col. 5, Line 30).

Regarding claim 12, Wein et al disclose a process control instrument comprising:

- a control for generating or receiving a high frequency signal (Col. 6, Line 8) (Abstract);

- a waveguide (13) comprising a cylindrical housing open at a distal end and closed at an inner end by a rear wall (2) (Fig. 5);

- a loop launcher (5) operatively connected to the control and comprising a wire electrically connected at one end to the control and extending into the waveguide (13) and connected at another end to the rear wall (2) (Fig. 5) (Col. 5, Line 40);

- a coupling cavity (31) comprising an open cylinder surrounding the waveguide and extending beyond the waveguide open end (Col. 5, Line 30) (Fig. 5); and

- an antenna (4) operatively coupled to the coupling cavity (31) and the waveguide (13) (Fig. 5).

Regarding claim 13, Wein et al disclose that the coupling cavity extends beyond the waveguide open end a length in a range of about 7, 9, 11 or higher odd multiples of quarter waveguide wavelength (Col 3, Line 55).

Regarding claim 14, Wein et al disclose that the coupling cavity is of metal construction (Col. 5, Line 30).

Regarding claim 15, Wein et al disclose that the coupling cavity comprises a process connection (Col. 5, Line 31).

Regarding claim 16, Wein et al disclose that the loop launcher (5) comprises a wire having a first straight leg electrically connected at one end to the control and extending into the waveguide a frst select length, a second straight leg connected at one end to the rear wall and extending into the waveguide a second select length, greater than the first select

length, and a curved middle section connecting other ends of the first and second straight legs (Col. 5, Line 51) (Fig. 5).

Regarding claim 17, Wein et al disclose that a union nut operatively secured to the waveguide for threading relative to the antenna at any angular orientation (Fig. 5).

Regarding claim 25, Wein et al disclose a process control instrument comprising:

- a housing (1) (Fig. 1); a control in the housing for generating or receiving a high frequency signal (Col. 6, Line 8);

- a waveguide (13) comprising a cylindrical housing closed at one end by a rear wall (2) (Fig. 5);

- a loop launcher (5) operatively connected to the control and comprising a wire electrically connected at one end to the control and extending into the waveguide and connected at another end to the rear wall to develop an asymmetrical radiated electromagnetic field (Col. 2, Line 11) (Fig. 5);

- an antenna (4) operatively coupled to the waveguide (Fig. 5); and

- means for rotatably mounting the waveguide to the housing (1) so that the housing and the loop launcher (5) can be independently oriented relative to a process vessel (Col. 7, Line 35) (Fig. 5).

Regarding claim 28, Wein et al disclose that the waveguide comprise a two piece assembly including a waveguide adapter operatively secured to the housing and a waveguide adapter tube extending from the waveguide adapter and defining the cylindrical housing so that the waveguide adapter defines the rear wall (2) (Fig. 5) (Col. 5, Line 1).

Regarding claim 29, Wein et al disclose that a conductor (6) passing through the waveguide adapter for connecting the loop launcher (5) to the control (Fig. 5) (Col. 5, Line 35).

Regarding claim 30, Wein et al disclose that a union nut operatively secured to the waveguide for threading relative to the antenna at any angular orientation so that the housing and the loop launcher can be independently oriented relative to a process vessel (Fig. 5).

Regarding claim 31, Wein et al disclose that the waveguide adapter tube includes an annular shoulder and the union nut is operatively secured to the waveguide adapter tube between the shoulder and a snap ring (Fig. 5) (Col. 7, Line 50).

Regarding claim 32, Wein et al disclose that the loop launcher (5) comprises an asymmetrical wire (Col. 5, Line 40).

Regarding claim 33, Wein et al disclose that the loop launcher comprises a wire having a first straight leg electrically connected at one end to the control and extending into the waveguide a first select length, a second straight leg connected at one end to the rear wall and extending into the waveguide a second select length, greater than the first select length, and a curved middle section connecting other ends of the first and second straight legs (Col. 5, Line 51) (Fig. 5).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wein et al (USP. 6,202,485).

Regarding claim 6, Wein et al disclose the process control instrument as set forth in the claims except the curved middle section has a radius of about 10mm. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wein et al by making the curved middle section has a radius of about 10mm. The ordinary skill artisan would have been motivated to modify Wein et al in the manner described above for providing microwave pulses having a center frequency about 6 GHz as described in Wein et al (Col. 7, Line 27).

Regarding claim 8, Wein et al disclose the process control instrument as set forth in the claims except the first leg is parallel with the second leg. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wein et al by making the first leg is parallel with the second leg. The ordinary artisan would have been motivated to modify Wein et al in the manner descried above for providing microwave pulses having a center frequency about 6 GHz as described in Wein et al (Col. 7, Line 27).

Allowable Subject Matter

10. Claims 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 26-27, the references of the prior art of record fails to teach or suggest

the combination of the limitations of the means for rotatably mounting the waveguide to the housing comprises a waveguide adapter defining the rear wall of the waveguide and having a thread received in a threaded opening of the housing, and a set screw in the housing maintains the waveguide adapter in a desired rotational position.

Citation of relevant Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Mulrooney et al (USP. 6,062,095) disclose dual compartment instrument housing.

Prior art Burger (USP. 5,880,698) disclose transmitting microwaves for a filling level measuring device.

Prior art Wien et al (USP. 6,499,346) disclose filling level measuring device.

Prior art Cherek et al (USP. 5,943,294) disclose level detector for fluent material.

Prior art Gard (USP. 6,642,807) disclose coaxial probe for high temperature and high pressure applications.

Prior art Faust (USP. 6,750,808) disclose process instrument with split intrinsic safety barrier.

Prior art Griessbaum et al (USP. 6,750,657) disclose combination of a feedthrough element for an electric high frequency signal and a probe.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC
April 12, 2005

Don Wong
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